



LM1884 TV Stereo Decoder

General Description

The LM1884 is a decoder designed for television stereo. An L-R output is provided to drive further audio processing.

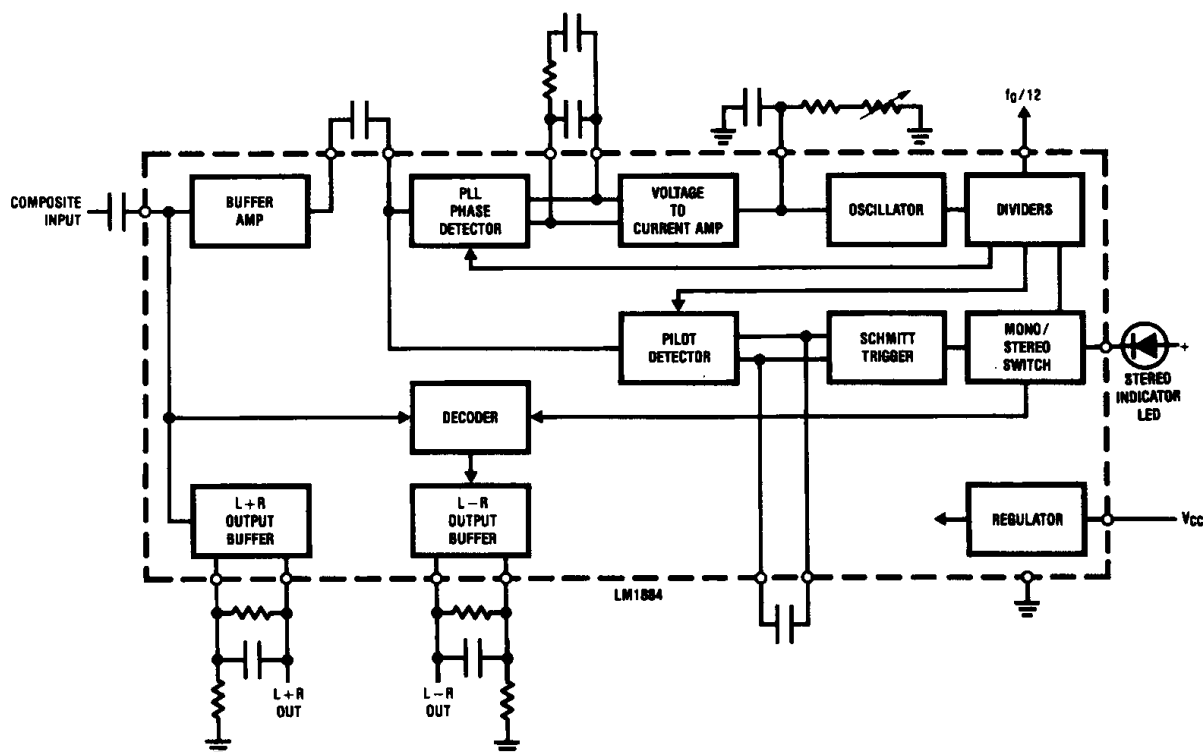
Features

- Low impedance L+R and L-R outputs
- Mono/Stereo switching and indication
- Low distortion—0.10% typical

Applications

- Stereo television sets
- Stereo adapters
- Cable television

Block Diagram



TL/H/6759-1

Order Number LM1884N
See NS Package Number N16A

Absolute Maximum Ratings $T_A = +25^\circ\text{C}$ unless otherwise noted

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

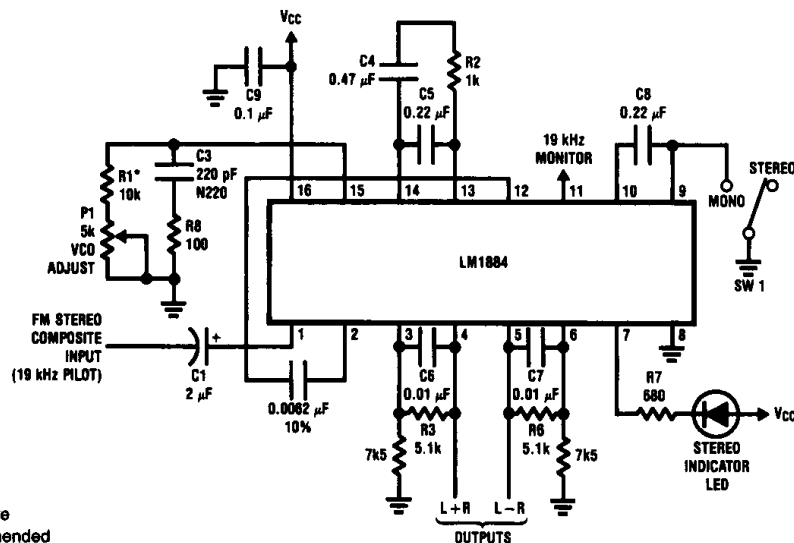
| | |
|--|-------------------------|
| Power Supply Voltage | 16V |
| Power Dissipation (Package Limitation) | 1800 mW |
| Derate Above $T_A = +25^\circ\text{C}$ | 15 mW/ $^\circ\text{C}$ |

| | |
|--------------------------------------|---|
| Operating Temp. Range (Ambient) | -40°C to $+85^\circ\text{C}$ |
| Storage Temperature Range | -65°C to $+150^\circ\text{C}$ |
| Lamp Drive Voltage | |
| Max Voltage at Pin 7 with Lamp "Off" | 16V |
| Lamp Current | 100 mA |
| Lead Temperature (Soldering 10 sec.) | 260°C |

Electrical Characteristics

Parameters Guaranteed by Electrical Testing Test Circuit, $T_A = +25^\circ\text{C}$, $V_{CC} = 12\text{V}$ unless noted

| Parameter | Conditions | Min | Typ | Max | Units |
|---|--|-----------|------|----------|------------|
| DC $V_{IN} = 0$ | | | | | |
| Supply Current | $V_{CC} = 16\text{V}$ | 15 | 33.5 | 50 | mA |
| Output Voltage | Pin 4 | 1.7 | 3.5 | 5.0 | V |
| Output Voltage | Pin 5 | 1.7 | 3.8 | 5.0 | V |
| Output Impedance | Pins 4, 5 | | 100 | 300 | Ω |
| Lamp Leakage | Lamp off, pin 7 voltage = 16V | | | 0.1 | mA |
| Lamp Saturation Voltage | Lamp on, pin 7 current = 100 mA | | | 2.0 | V |
| Audio Composite signal with 38 kHz subcarrier and 10% 19 kHz pilot, $f_{mod} = 1\text{ kHz}$. Adjust P1 for 19 kHz $\pm 10\text{ Hz}$. | | | | | |
| L + R Channel Gain | $V_{IN} = 2.5\text{Vpp}$ L = R, pilot off, pin 4 | 0.8 | 1.0 | 1.2 | |
| L + R Channel THD | $V_{IN} = 2.5\text{Vpp}$ L = R, pilot off, pin 4 | | 0.1 | 1.0 | % |
| Gain Ratio, L + R Channel to L - R Channel | $V_{IN} = 2.5\text{Vpp}$, L only | -2.0 | 0.0 | 2.0 | db |
| Supply Rejection | 100 mVrms, 1 kHz on supply, $V_{IN} = 0$ | 30 | 60 | | db |
| DC Output Shift, Mono to Stereo | Pilot off to on, pins 4, 5 | | | ± 20 | mV |
| Input Impedance | Pin 1 | 15 | 50 | 150 | k Ω |
| PLL | | | | | |
| Pilot Level for Lamp On | | 12 | | 20 | mV |
| Pilot Level for Lamp Off | | 3 | | 10 | mV |
| Capture Range | Pilot = 25 mVrms | ± 0.5 | | | % |

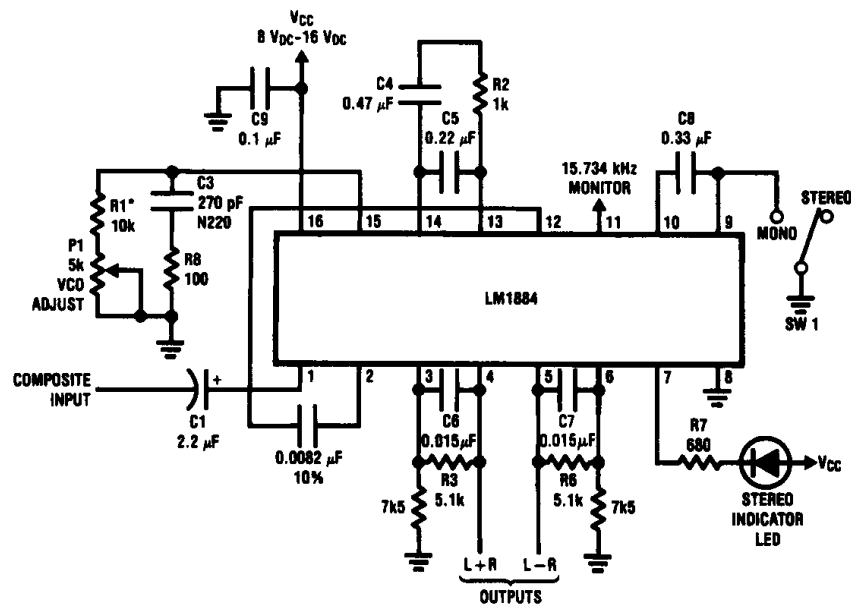
Test Circuit

*Metal film, zero temperature coefficient resistor recommended

FIGURE 1

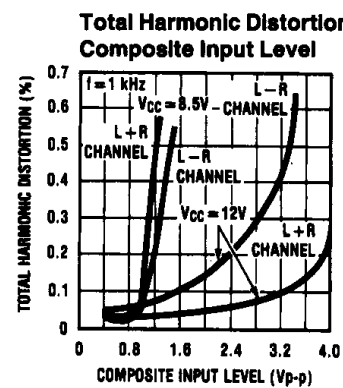
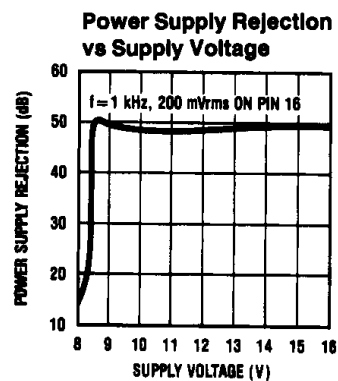
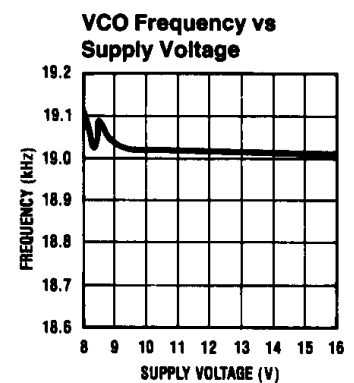
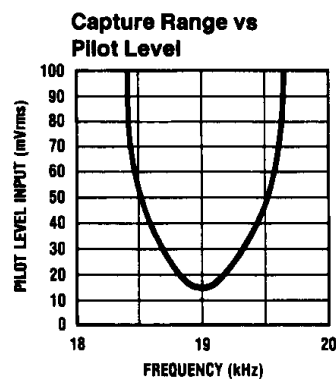
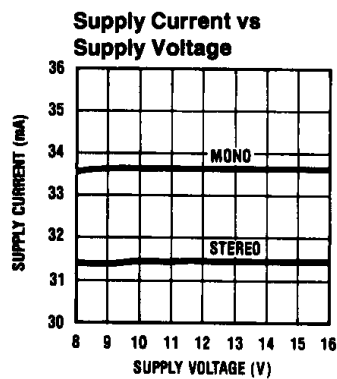
TL/H/6759-3

Typical Application



* Metal film, zero temperature coefficient resistor recommended

TL/H/6759-2



TL/H/6759-4